Evaluating changes in stage I seminoma management: a single institution review

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Purpose: *Historically adjuvant radiotherapy has been routinely recommended for stage I seminoma patients but surveillance has become an increasingly popular option over the last decade. We therefore decided to review the approach currently used by the radiation oncologists at our center.*

Methods: *A 14-item questionnaire evaluating physician opinions about treatment options for stage I seminoma patients was developed at the Ottawa Hospital Regional Cancer Centre (OHRCC). It was sent to all the radiation oncologists at OHRCC treating genitor-urinary (GU) malignancies for self-completion.*

Results: *All the GU radiation oncologists completed the survey for a response rate of 100% (7/7). Most (71%) have been treating GU malignancies for at least 5 years with the median being 9 years. At present, all consider surveillance and adjuvant radiotherapy as standard treatment options for stage I seminoma patients, and recommend these to patients. They give patients information about the treatment options but also give their personal recommendations as well. Most have been routinely discussing surveillance as an option since the late 1990's. Clinical data from the OHRCC confirms that there has been a significant increase in the proportion of stage I seminoma patients being managed by surveillance over the past 15 years. Currently almost half of patients are choosing surveillance.*

Conclusions: *There appears to be a fairly uniform approach towards the management of stage I seminoma patients at the OHRCC. Radiation oncologists are now routinely offering both surveillance and adjuvant radiotherapy as reasonable option for these patients, and this is consistent with the recently published literature on this topic.*

Key Words: seminoma, management, surveillance, radiotherapy

Introduction

Although testicular cancers are considered relatively rare, they are the most common malignancy in men aged 20 to 40 years.[1] Approximately half of these testicular tumors are seminomas, most of which present as a clinical stage 1 disease.[2,3] Diagnosis and initial treatment almost always consist of a radical inguinal orchiectomy but subsequent management is more controversial.[4,5] Historically, adjuvant radiotherapy was recommended in order to reduce the 5 year relapse rate from approximately 20% to less than 5% with 5 year overall survival close to 100%.[6-8]

However, concerns regarding the potential long-term side effects of radiotherapy have arisen and these include second malignancies[2,9] and infertility.[10] Studies evaluating close surveillance following orchiectomy indicate that relapses can be effectively managed with no adverse impact on survival while avoiding unnecessary radiation for most patients.[11,12] Also, a protocol of two cycles of adjuvant single-agent Carboplatinum has been investigated with good preliminary results but long-term data is still not available.[11,13] Recent published studies suggest that the use of adjuvant radiotherapy has declined over the last decade and other options are routinely being

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considered.[14,15] Published surveys among Canadian, American and Australian radiation oncologists suggest that most discuss surveillance with their stage I seminoma patients but they expect that less than 25% of patients would choose this option.[16,17]

At the Ottawa Hospital Regional Cancer Centre (OHRCC) we do not have formal written treatment guidelines for the management of stage I seminoma. Therefore, we decided to evaluate the perspectives of the radiation oncologists treating genitourinary (GU) malignancies regarding the management of stage I seminoma. We wanted to compare their responses with how patients with stage I seminoma have actually been managed over the last 15 years. The ultimate goal being to see if the changes in practice patterns reported in the literature were also taking place at the OHRCC.

Methods

A 14-item survey was developed at the OHRCC to evaluate physicians opinions regarding the treatment options for stage I seminoma patients as indicated in Table 1. It was sent electronically by email attachment

TABLE 1. **Stage I seminoma survey questions**

1. Do you routinely **discuss** surveillance for Stage I seminoma? Y/N
2. Do you **discuss** surveillance for Stage I seminoma patients with the following features:
   a. Tumour >4cm Y/N
   b. Lymphovascular invasion Y/N
   c. Local extension (e.g. spermatic cord or scrotal invasion) Y/N
   d. Are there any (other) situations where you would not consider surveillance for Stage I seminoma? Y/N
      If Yes, please specify _____
   e. Do the features listed above influence your treatment **recommendation**? Y/N
3. Does patient age influence your decision to offer surveillance? Y/N
   a. If Yes, please specify _____
4. Which of the following management approaches do you believe should be considered as **standard options** for Stage I seminoma? (circle all that apply)
   a. Observation
   b. Adjuvant radiotherapy
   c. Adjuvant chemotherapy
   d. Retroperitoneal lymph node dissection
5. Which of the following management options do you routinely **discuss** for patients with Stage I seminoma? (circle all that apply)
   a. Observation
   b. Adjuvant radiotherapy
   c. Adjuvant chemotherapy
   d. Retroperitoneal lymph node dissection
6. Which of the following management options do you **recommend** to patients with Stage I seminoma? (circle all that apply)
   a. Observation
   b. Adjuvant radiotherapy
   c. Adjuvant chemotherapy
   d. Retroperitoneal lymph node dissection
7. How do you reach a management decision with your Stage I seminoma patients? (circle only one)
   a. I give the patient information regarding his options and let him decide
   b. I give the patient information regarding his options but specifically make a recommendation about treatment for the patient
   c. I give the patient information regarding his options and give my recommendation but let the patient decide
   d. I just give the patient my recommendations because giving options would just confuse the patient
   e. Other (please specify) _____

TABLE 1. **Stage I seminoma survey questions**

8. If you offer surveillance as an option for your Stage I seminoma patients, when did you routinely start recommending this as an option? (circle only one)
   a. Before 1990
   b. Between 1990 and 1995
   c. Between 1996 and 2000
   d. After 2000
   e. Always (ever since I have being working as an oncology specialist)
9. What proportion of patients with Stage I seminoma do you think choose surveillance?
   a. <25%
   b. 25-50%
   c. 51-75%
   d. >75%
10. Why do you think is the main reason patients would not choose surveillance? (circle just one)
   a. Fear or anxiety associated with diagnosis of recurrence
   b. Reluctance to have close surveillance (follow-up visits, tests, etc.)
   c. Belief that survival is better with upfront treatment
   d. Physician recommends adjuvant treatment
   e. Other (please specify) _____
11. Theoretically, if you had Stage I seminoma, which treatment option do you think you would choose to have? (circle only one)
   a. Observation
   b. Adjuvant radiotherapy
   c. Adjuvant chemotherapy
   d. Retroperitoneal lymph node dissection
   e. Unsure
   f. Other (please specify) _____
12. Are most patients who choose surveillance that you know of compliant with the follow-up protocol including clinic visits, bloodwork and imaging tests? Y/N/Unsure
13. Do concerns about patient compliance (with follow-up appointments or tests) influence your discussion to offer surveillance? Y/N
14. If you have major concerns about the potential toxicity of radiotherapy, please rank them in order of importance below: (e.g. 1 = most important)
___ a. Nausea, vomiting, fatigue and other acute side-effects
___ b. Late gastrointestinal toxicity
___ c. Late renal toxicity
___ d. Infertility
___ e. Radiation-induced malignancy
___ f. Other (please specify) _____

to all the radiation oncologists treating GU malignancies at the OHRCC. It was intended for self-completion and anticipated to take approximately 5 to 10 minutes to complete. The completed surveys were then collated and the data was tabulated on an excel spreadsheet for analysis. Retrospective review of the management of stage I seminoma patients at the OHRCC from 1989 to 2003 was also carried out. Comparison was then made between the physician responses and actual treatment regimen chosen for the patient.

Results

All seven GU radiation oncologists completed and returned these surveys for a 100% response rate. All were graduates of Canadian medical schools and also Canadian- trained in radiation oncology. Five

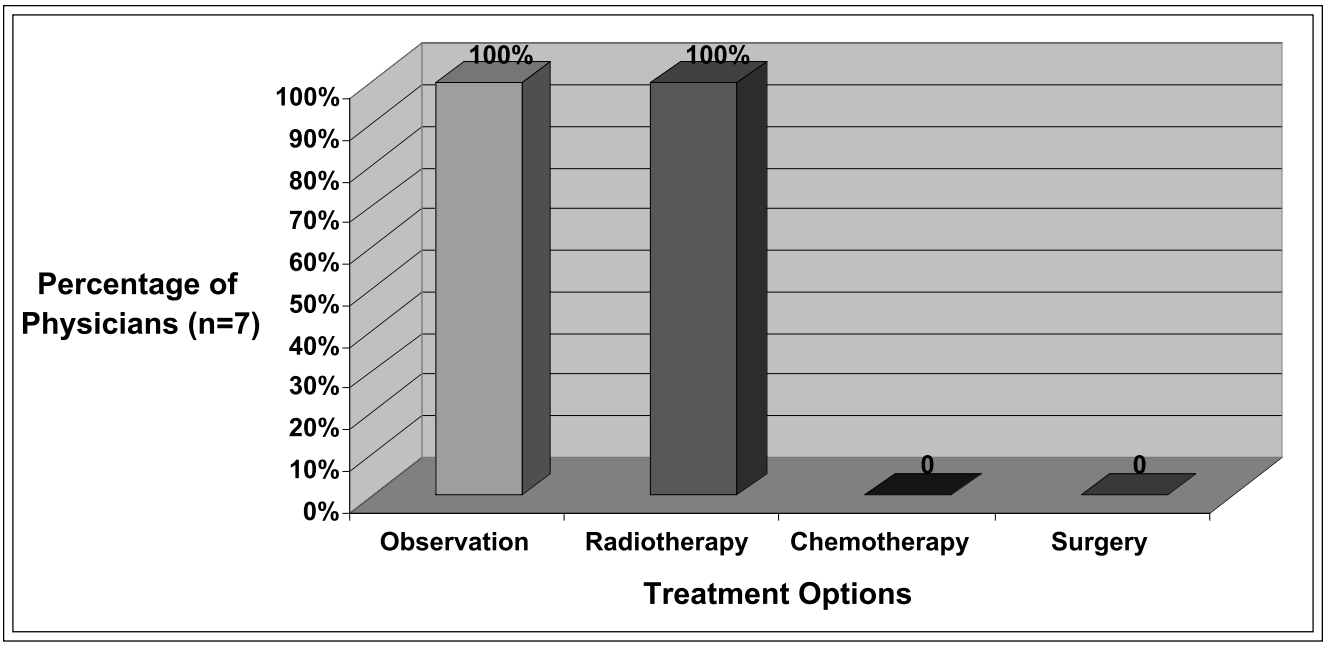

Figure 1. Standard management options for stage I seminoma patients following orchiectomy.

completed their residencies in radiation oncology at the University of Ottawa while two trained at the University of Toronto. Most (71%) had been treating genitourinary malignancies for at least 5 years with the median period of 9 years.

The approach used by all the oncologists was essentially to give patients information about the standard treatment options as well as their own personal recommendations. They all considered surveillance and adjuvant radiotherapy to be standard management options following orchiectomy. as shown in Figure 1, but not any further surgery or chemotherapy. In fact, only one radiation oncologist routinely discusses the role of adjuvant chemotherapy

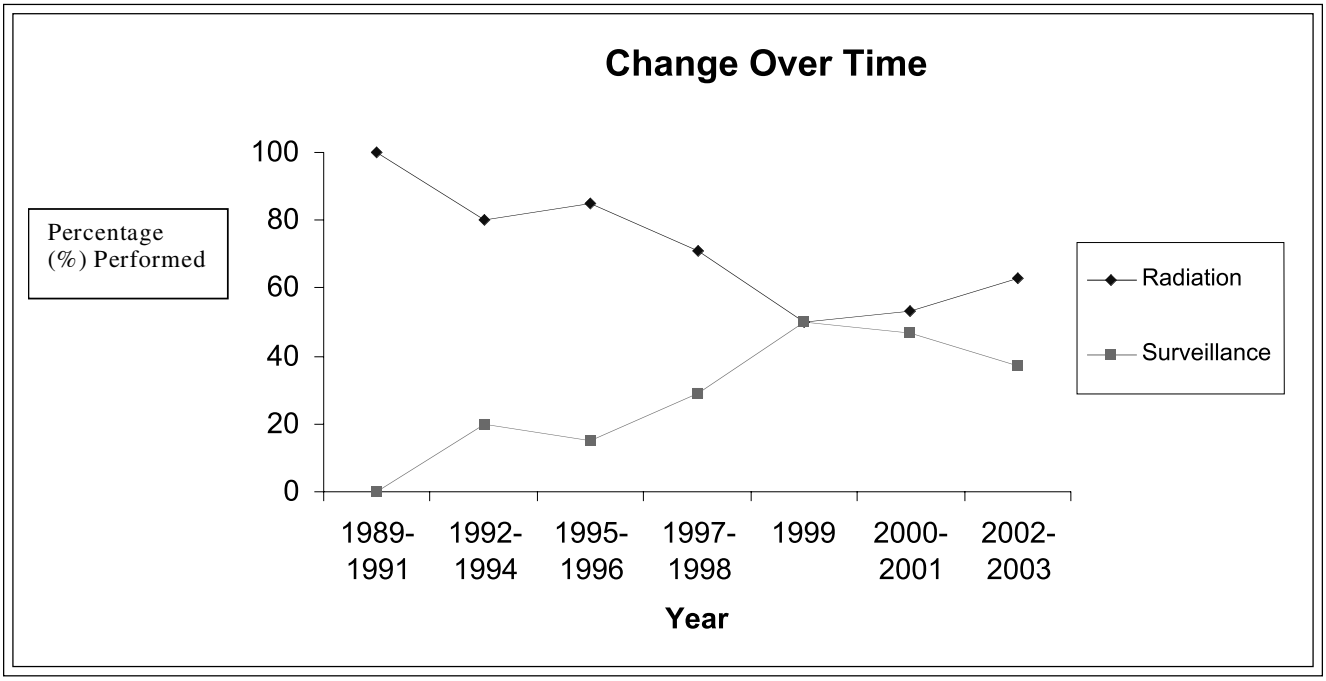

Figure 2. Management of stage I seminoma patients at ORCC following orchiectomy from 1989-2003.

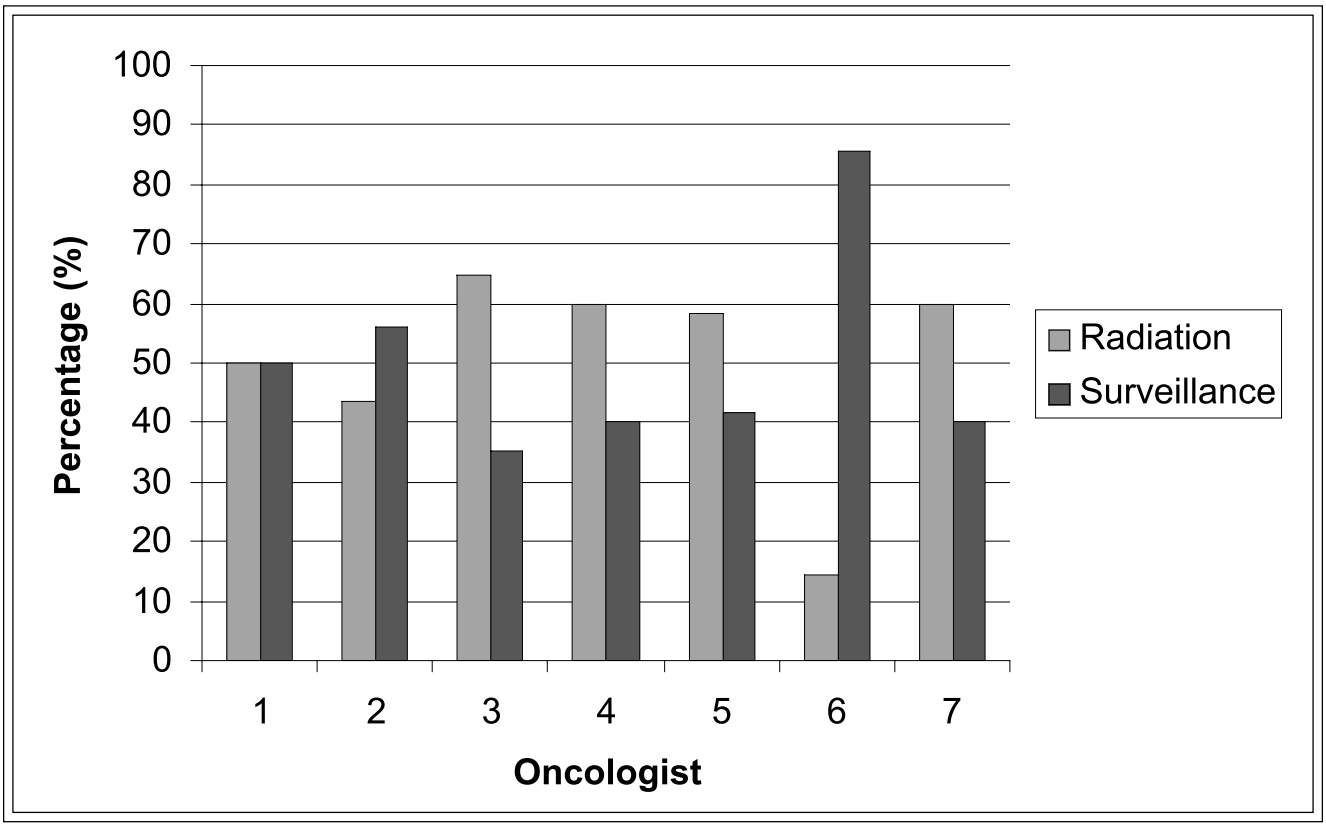

Figure 3. Management of stage I seminoma patients from 1999-2003 according to radiation oncologist.

although he does not recommend it to his patients. Most stated that they had been offering surveillance routinely as an option since the late 1990's. All indicated that concerns about patient compliance influenced their decision to offer surveillance. There were mixed opinions regarding whether patient age and tumor related factors (tumor size, local extension and lymphovascular invasion) should influence the management decision.

The majority thought that 25% to 50% of patients would choose surveillance and that patients were generally compliant with their follow up protocol. Most felt that the main reason patients would not choose surveillance was related to "fear or anxiety associated with a diagnosis of recurrence". The biggest concerns about offering adjuvant radiotherapy were related to the risk of second malignancies following radiation as well as infertility. Interestingly most (71%) would choose surveillance for themselves if they had stage I seminoma.

A total of 150 stage I seminoma patients were seen at the OHRCC over the 15-year period from 1989-2003, with 71% receiving adjuvant radiotherapy and 29% being placed on surveillance. As shown in Figure 2, there has been a major increase in the proportion of patients being put on surveillance, especially over the last 5 years. In recent years, almost 50% of patients have been placed on surveillance. Figure 3 indicates that all physicians are offering surveillance as an option to their patients.

Discussion

Approaches to cancer treatment change with time based on personal and institution experience as well as incorporating the published study results into practice.[18-20] Usually changes occur gradually as physicians reflect on the available evidence. Sudden changes based on the results from one or two studies are uncommon.[19,21] Early stage testicular seminoma management appears to be an example of this. In the 1980's adjuvant radiotherapy was considered standard treatment for stage I seminoma based on the published literature at the time[22-24] and our own data. Gradually studies were published in the 1990's outlining the success of surveillance protocols.[8,25] During the same time, there was also an accumulation of data regarding long-term toxicity of radiation.[2,9,10,26] This has led to a gradual shift in the published literature for more acceptance and support of

alternatives to standard adjuvant radiotherapy.[12,14,15] This is reflected in the increased use of surveillance as well as consideration of adjuvant chemotherapy.

Our survey results confirm that all the GU radiation oncologists at our institution have also changed their approach with regards to stage I seminoma consistent with the changes reflected in the published literature. There now appears to be a consistent approach regarding offering the patients the options of surveillance and adjuvant radiotherapy. It is reassuring to see this consistency in approach despite the lack of formal written guidelines. Our physicians voiced the same concerns regarding both the use of surveillance protocols and adjuvant radiotherapy toxicity as other published series. The biggest concerns regarding surveillance are related to patient compliance. The major concerns about radiation are primarily related to the risk of second malignancies as well as the perceived increased risk of infertility.

A survey of Canadian, American, and Australian radiation oncologists several years ago showed that not all radiation oncologists were routinely offering their patients surveillance and overall it was felt that only a small minority of patients (<25%) would choose surveillance.[16,17] This is obviously not the case presently at our centre. Interestingly, a recent survey of Canadian urologists regarding the management of stage I seminoma suggests that for them the biggest issue regarding adjuvant radiotherapy is the risk of infertility and that they still recommend radiotherapy routinely.[27]

The fact that surveillance has increased at the OHRCC and all the GU radiation oncologists have patients on surveillance protocols allows us to be sure that, despite some variations in opinions, patients are generally getting a fairly consistent management discussion from their radiation oncologists. This study has served as a useful quality assurance tool for the GU site group at our centre and confirms that we are following what would be considered standard practice. The fact that most of the oncologists would choose surveillance for themselves leads one to suspect that this approach could increase in the future but this has yet to be determined.

Conclusions

All our GU radiation oncologists now consider both surveillance and adjuvant radiotherapy as standard treatment options for stage I seminoma patients post orchiectomy and are discussing these routinely with their patients. This has led to a dramatic rise in the proportion of patients on surveillance over the last decade as a result of this change in treatment approach. □

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